



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Appln. of: J. Gary Eden et al.

Appln. No.: 10/762,223

Filed: January 20, 2004

For: MAGNETO-OPTICAL  
APPARATUS AND METHOD  
FOR THE SPATIALLY-  
RESOLVED DETECTION OF  
WEAK MAGNETIC FIELDS

Examiner:

Art Unit: 2858

Attorney Docket No: 10322/41

**INFORMATION DISCLOSURE STATEMENT**

In accordance with the duty of disclosure under 37 C.F.R. §1.56 and §§1.97-1.98, and more particularly in accordance with 37 C.F.R. §1.97(b), Applicant hereby cites the following reference(s):

No.	Date of Publication	Patentee/Applicant/Assignee
6,216,027	April 10, 2001	Willis et al.
6,066,084	May 23, 2000	Edrich et al.
6,023,161	February 8, 2000	Dantsker et al.
5,817,021	October 6, 1998	Reichenberger
5,655,534	August 12, 1997	Ilmoniemi
5,634,469	June 3, 1997	Grabner, Jr.
5,603,321	February 19, 1997	Kynor et al.
5,579,241	November 26, 1996	Corby, Jr., et al.
5,560,367	October 1, 1996	Haardt et al.
5,519,645	May 21, 1996	Bohley
5,515,301	May 7, 1996	Corby, Jr., et al.
5,476,438	December 19, 1995	Edrich et al.
5,283,526	February 1, 1994	Uhl et al.
5,282,474	February 1, 1994	Vales Sosa et al.
5,193,348	March 16, 1993	Schnapper
5,095,270	March 10, 1992	Ludeke
5,012,190	April 30, 1991	Dössel
4,996,479	February 26, 1991	Hoenig
4,982,157	January 1, 1991	Seifert
4,937,525	June 26, 1990	Daalmans
4,771,239	September 13, 1988	Hoenig
4,761,611	August 2, 1988	Hoenig
4,749,946	June 7, 1988	Hoenig
4,733,180	March 22, 1988	Hoenig et al.
4,700,135	October 13, 1987	Hoenig

4,693,000	September 15, 1987	Hoenig
4,613,817	September 23, 1986	Heonig
4,591,787	May 27, 1986	Hoenig
<b>OTHER ART – NON PATENT LITERATURE DOCUMENTS</b>		
R. Bison et al, "A Laser-Pumped Magnetometer for the Mapping of Human Cardiomagnetic Fields, pgs. 325-328, Applied Physics, February 2003.		
Dyitry Budker, "A New Spin on Magnetometry," pgs. 574-575, Nature, Vol. 422, April 2003.		
I.K. Kominis et al., "A Subfemtotesla Multichannel Atomic Magnetometer, pgs. 596-599, Nature, Vol. 422, April 2003.		
D. Budker et al., "Sensitive Magnetometry Based on Nonlinear Magneto-Optical Rotation, pgs. 043403-1 to 043403-7, Physics Review, Vol. 62, The American Physical Society 2002.		
J. Seipel et al., "The Magnetic Field Accompanying Neuronal Activity A New Method for the Study of the Nervous System, pgs. 1-4, Journal of the Washington Academy of Sciences,		
G. Baule et al., "Detection of the Magnetic Field of the Heart", pgs. 95-96, Department of Electrical Engineering, 1963.		
Y. Safonov et al., "Method of Recording the Magnetic Field of the Heart (Magnetocardiography)", pgs. 1022-1024, Department of Internal Medicine, Voronezh Medical Institute, Voronezh Polytechnic Institute (Presented by the Academician V.V. Parin), Vol. 64, September 1967.		
D. Cohen, "Magnetic Fields Around the Torso: Production by Electrical Activity of the Human Heart, pgs. 652-654, Science, New Series, Vol. 156, Issue 3775, May 5, 1967.		
D. Cohen, "Magnetoencephalography: Evidence of Magnetic Fields Produced by Alpha-Rhythm Currents, pgs. 784-786, Science, New Series, Vol. 161, Issue 3843, August 23, 1968.		
D. Cohen, "Detection and Analysis of Magnetic Fields Produced by Bioelectric Currents in Humans, pgs. 1046-1048, Journal of Applied Physics, Vol. 40, Number 3, March 1, 1969.		
D. Cohen et al., "Magnetocardiogram Taken Inside a Shielded Room with a Superconducting Point-Contact Magnetometer, pgs. 278-280, Applied Physics Letter, Vol 16, Number 7, April 1970.		
D. Cohen, "Magnetoencephalography: Detection of the Brain's Electrical Activity with a Superconducting Magnetometer, pgs. 664-666, Science, New Series, Vol. 175, Issue 4022, Feb. 11, 1972.		
M. Mäkilä et al., "New Trends in Clinical Magnetocardiography", pgs. 410-417, Published prior to the filing of this application.		
P.B. Ales, "Structure of the Intermediate State in Superconducting Lead, pgs. 104-108, Physical Review, Vol. 105, No. 1, January 1957.		
A.A. Polyanski et al., "Magneto-Optical Characterization Techniques", pgs. 1551-1567, published prior to the filing of this application.		
G.L. Fitzpatrick et al., "Magneto-Optic-Eddy Current Imaging of Subsurface Corrosion and Fatigue Cracks in Aging Aircraft", pgs. 1159-1166, Review of Progress in Quantitative Nondestructive Evaluation, Vol. 15., 1996.		
E. Yamasaki et al., "Three-Dimensional Magneto-Optic Near-Field Mapping Over 10-50 µm-Scale Line and Space Circuit Patterns", pgs. 318-319, IEEE 2001.		
M. Klank et al., "Sensitive Magneto-Optical Sensor for Visualization of Magnetic Fields Using Garnet Films of Specific Orientation", pgs. 6484-6488, Journal of Applied Physics, Vol. 92, Number 11, December 2002.		
J.R.A. Miranda et al., "A Novel Biomagnetic Method to Study Gastric Antral Contractions", pgs. 1791-1799, Phys. Med. Biol. 42, 1997.		
C. Bergemann et al., "Magnetic Ion-Exchange Nono- and Microparticles for Medical, Biomedical and Molecular Biological Applications, pgs. 45-52, Journal of Magnetism and Magnetic Materials 194, 1999.		

Andreas Jordan, "Magnetic Fluid Hyperthermia (MFH): Cancer Treatment with AC Magnetic Field Induced Excitation of Biocompatible Superparamagnetic Nanoparticles", pgs. 413-419, <i>Journal of Magnetism and Magnetic Materials</i> 201, 1999.
Ch. Alexion et al., "Magnetic Drug Targeting: Biodistribution and Dependency on Magnetic Field Strength", pgs. 363-366, <i>Journal of Magnetism and Magnetic Materials</i> 252, 2002.
E. Romanus et al., "Magnetic Nanoparticles Relaxation Measurement as a Novel Tool for in Vivo Diagnostics", pgs. 387-389, <i>Journal of Magnetism and Magnetic Materials</i> 252, 2002.

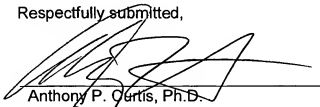
Applicant is enclosing Form PTO-1449 (one sheet), along with a copy of each listed reference for which a copy is required under 37 C.F.R. §1.98(a)(2). As each of the listed references is in English, no further commentary is believed to be necessary, 37 C.F.R. §1.98(a)(3). Applicant respectfully requests the Examiner's consideration of the above reference(s) and entry thereof into the record of this application.

By submitting this Statement, Applicant is attempting to fully comply with the duty of candor and good faith mandated by 37 C.F.R. §1.56. As such, this Statement is not intended to constitute an admission that any of the enclosed references, or other information referred to therein, constitutes "prior art" or is otherwise "material to patentability," as that phrase is defined in 37 C.F.R. §1.56(a).

Applicant has calculated no fee to be due in connection with the filing of this Statement. However, the Director is authorized to charge any fee deficiency associated with the filing of this Statement to a deposit account, as authorized in the Transmittal accompanying this Statement.

Respectfully submitted,

2/17/06  
Date

  
Anthony P. Curtis, Ph.D.  
(Reg. No. 46,193)



Form PTO-449	SERIAL NO. 10/762,223	CASE NO. 10322/41
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT	FILING DATE January 20, 2004	GROUP ART UNIT 2858
(use several sheets if necessary)		APPLICANT(S): J. Gary Eden et al.

**REFERENCE DESIGNATION U.S. PATENT DOCUMENTS**

EXAMINER INITIAL	DOCUMENT NUMBER <small>Number-Kind Code (if known)</small>	DATE	NAME	CLASS/ SUBCLASS	FILING DATE
	A1 6,216,027	April 10, 2001	Willis et al.		
	A2 6,066,084	May 23, 2000	Edrich et al.		
	A3 6,023,161	February 8, 2000	Dantsker et al.		
	A4 5,817,021	October 6, 1998	Reichenberger		
	A5 5,655,534	August 12, 1997	Ilmoniemi		
	A6 5,634,469	June 3, 1997	Grabner, Jr.		
	A7 5,603,321	February 19, 1997	Kynor et al.		
	A8 5,579,241	November 26, 1996	Corby, Jr., et al.		
	A9 5,560,367	October 1, 1996	Haardt et al.		
	A10 5,519,645	May 21, 1996	Bohley		
	A11 5,515,301	May 7, 1996	Corby, Jr., et al.		
	A12 5,476,438	December 19, 1995	Edrich et al.		
	A13 5,283,526	February 1, 1994	Uhl et al.		
	A14 5,282,474	February 1, 1994	Vales Sosa et al.		
	A15 5,193,348	March 16, 1993	Schnapper		
	A16 5,095,270	March 10, 1992	Ludeke		
	A17 5,012,190	April 30, 1991	Dössel		
	A18 4,996,479	February 26, 1991	Hoenig		
	A19 4,982,157	January 1, 1991	Seifert		
	A20 4,937,525	June 26, 1990	Daalmans		
	A21 4,771,239	September 13, 1988	Hoenig		
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	A24 4,733,180	March 22, 1988	Hoenig et al.		
	A25 4,700,135	October 13, 1987	Hoenig		
	A26 4,693,000	September 15, 1987	Hoenig		
	A27 4,613,817	September 23, 1986	Heonig		
	A28 4,591,787	May 27, 1986	Hoenig		

**FOREIGN PATENT DOCUMENTS**

EXAMINER INITIAL	DOCUMENT NUMBER <small>Number-Kind Code (if known)</small>	DATE	COUNTRY	CLASS/ SUBCLASS	TRANSLATION YES OR NO

EXAMINER /Nasir Shahrestani/	DATE CONSIDERED 07/18/2009
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /N.S./

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## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER <small>Number-Kind Code (if known)</small>	DATE	COUNTRY	CLASS/ SUBCLASS	TRANSLATION YES OR NO

EXAMINER INITIAL	OTHER ART - NON PATENT LITERATURE DOCUMENTS (Include name of author, title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published.				
	A29	R. Bison et al., "A Laser-Pumped Magnetometer for the Mapping of Human Cardiomagnetic Fields, pgs. 325-328, Applied Physics, February 2003.			
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	A36	D. Cohen, "Magnetic Fields Around the Torso: Production by Electrical Activity of the Human Heart, pgs. 652-654, Science, New Series, Vol. 156, Issue 3775, May 5, 1967.			
	A37	D. Cohen, "Magnetoencephalography: Evidence of Magnetic Fields Produced by Alpha-Rhythm Currents, pgs. 784-786, Science, New Series, Vol. 161, Issue 3843, August 23, 1968.			
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A44	G.L. Fitzpatrick et al., "Magneto-Optic-Eddy Current Imaging of Subsurface Corrosion and Fatigue Cracks in Aging Aircraft", pgs. 1159-1166, Review of Progress in Quantitative Nondestructive Evaluation, Vol. 15., 1996.
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A46	M. Klank et al., "Sensitive Magneto-Optical Sensor for Visualization of Magnetic Fields Using Garnet Films of Specific Orientation", pgs. 6484-6488, Journal of Applied Physics, Vol. 92, Number 11, December 2002.
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